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Siegel

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(54) **FLUID HANDLING DEVICE AND METHOD**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 28 days.

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

(63) Continuation-in-part of application No. 14/065,660, filed on Oct. 29, 2013, now Pat. No. 9,321,242, which (Continued)

(51) **Int. Cl.**
B32B 3/30 (2006.01)
A47L 23/26 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***A47L 23/266*** (2013.01); ***A47G 27/0206*** (2013.01); ***A61G 13/102*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC Y10T 428/24479; Y10T 428/24496–428/24512; Y10T 428/2457;
(Continued)

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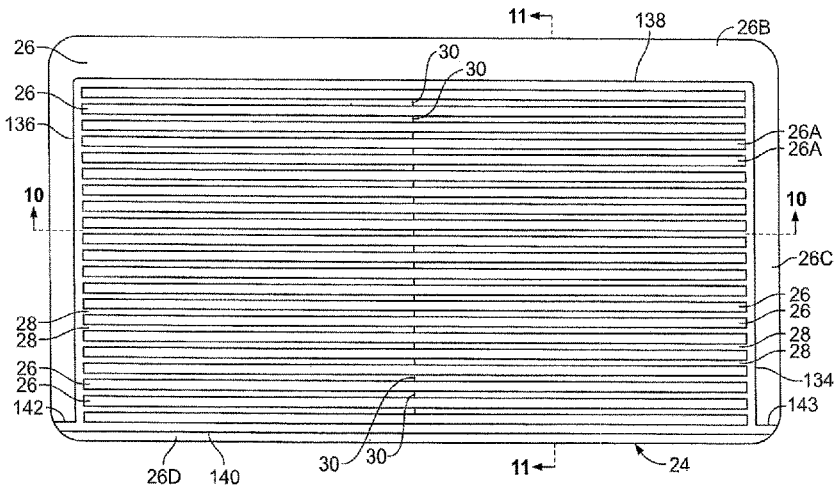
Primary Examiner — Alexander Thomas

(57) **ABSTRACT**

A device and method for handling fluids released during a procedure employs a floormat with opposing surfaces. The floormat is formed, at least in part, of compressible and resilient material. An absorbent sheet is attached to one of the opposing surfaces of the floormat. At least part of the absorbent sheet is stacked to extend peripherally beyond the floormat. The floormat and absorbent sheet are placed where a user is expected to stand during the procedure, and are stacked with at least part of the absorbent sheet extending beyond the floormat. A user stands atop the floormat and absorbent sheet during at least part of the procedure. During the procedure, fluids that fall onto the absorbent sheet are absorbed into it. The floormat and absorbent sheet are vacated and discarded before starting another procedure.

20 Claims, 9 Drawing Sheets



Related U.S. Application Data

is a continuation-in-part of application No. 12/869,305, filed on Aug. 26, 2010, now Pat. No. 8,663,782.

(60) Provisional application No. 61/287,255, filed on Dec. 17, 2009.

(51) **Int. Cl.**

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A47G 27/02	(2006.01)
A61G 13/10	(2006.01)
A61M 1/00	(2006.01)
B32B 5/02	(2006.01)
B32B 5/18	(2006.01)
B32B 25/04	(2006.01)
B32B 27/30	(2006.01)
B32B 3/06	(2006.01)
B32B 3/08	(2006.01)
B32B 3/26	(2006.01)
A61B 50/10	(2016.01)
A61B 46/00	(2016.01)

(52) **U.S. Cl.**

CPC ***A61M 1/008*** (2013.01); ***B08B 5/04*** (2013.01); ***B32B 3/06*** (2013.01); ***B32B 3/08*** (2013.01); ***B32B 3/085*** (2013.01); ***B32B 3/26*** (2013.01); ***B32B 3/30*** (2013.01); ***B32B 5/022*** (2013.01); ***B32B 5/026*** (2013.01); ***B32B 5/18*** (2013.01); ***B32B 25/04*** (2013.01); ***B32B 27/304*** (2013.01); *A61B 46/00* (2016.02); *A61B 50/10* (2016.02); *B32B 2250/44* (2013.01); *B32B 2262/0276* (2013.01); *B32B 2262/04* (2013.01); *B32B 2266/0278* (2013.01); *B32B 2266/08* (2013.01); *B32B 2307/21* (2013.01); *B32B 2307/3065* (2013.01); *B32B 2307/536* (2013.01); *B32B 2307/54* (2013.01); *B32B 2307/71* (2013.01); *B32B 2307/714* (2013.01); *B32B 2307/718* (2013.01); *B32B 2307/72* (2013.01); *B32B 2307/726* (2013.01); *B32B 2307/732* (2013.01); *B32B 2307/744* (2013.01); *B32B 2307/748* (2013.01); *B32B 2405/00* (2013.01); *B32B 2471/04* (2013.01); *B32B 2535/00* (2013.01); *Y10T 428/2457* (2015.01); *Y10T 428/24479* (2015.01)

(58) **Field of Classification Search**

CPC A61G 13/102; A47L 23/266; A61B 19/088

See application file for complete search history.

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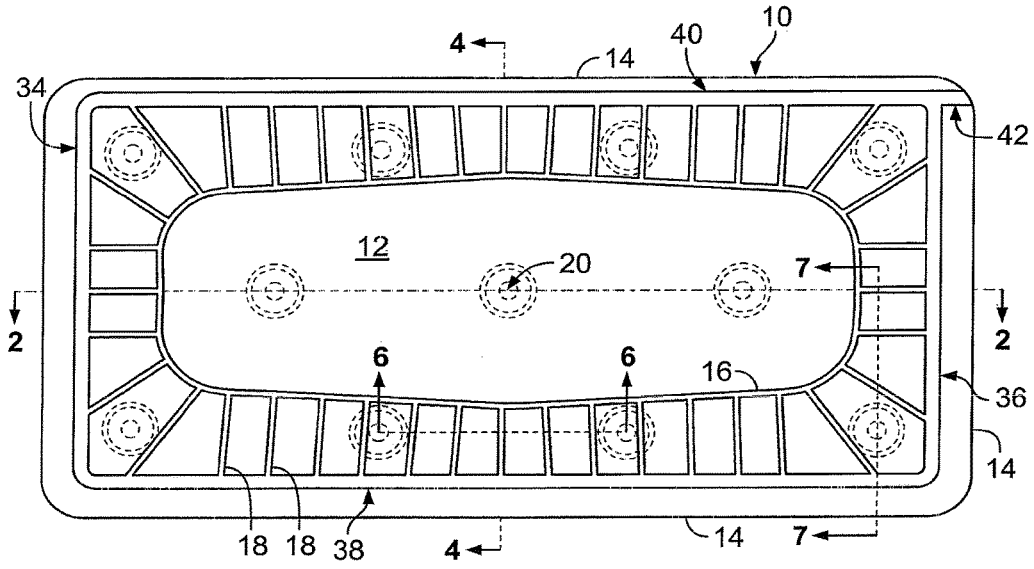


FIG. 1

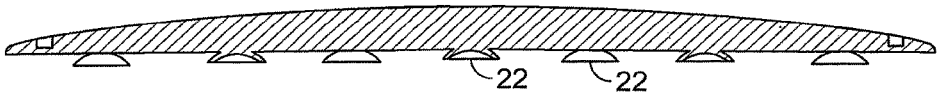
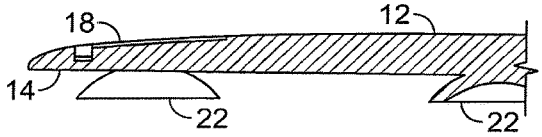


FIG. 2



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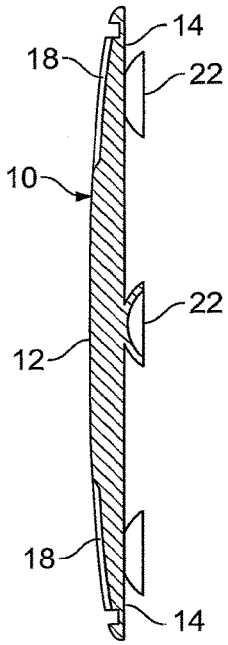

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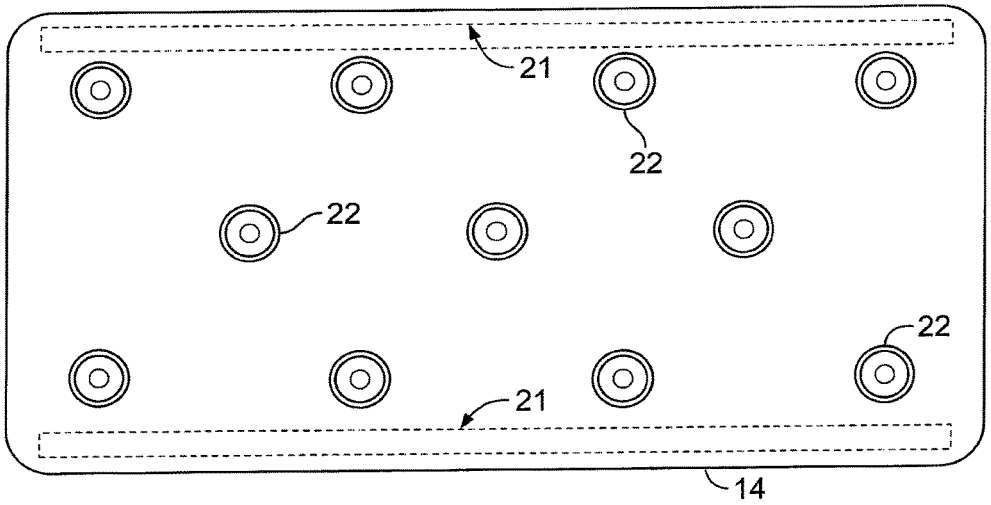

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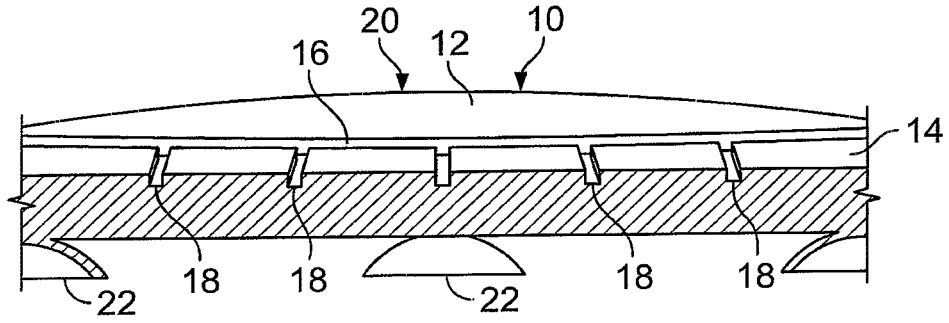

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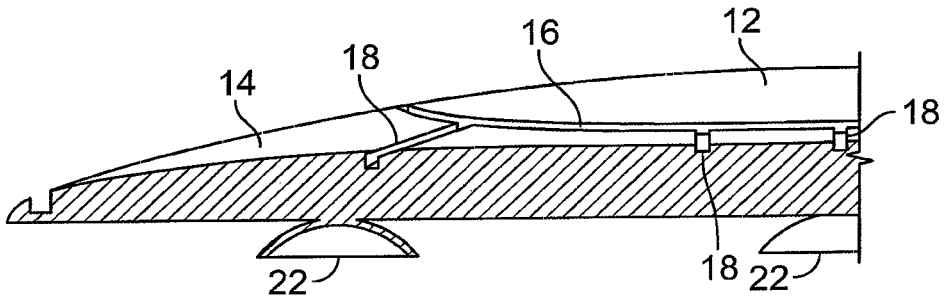

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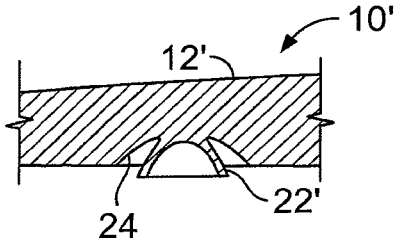

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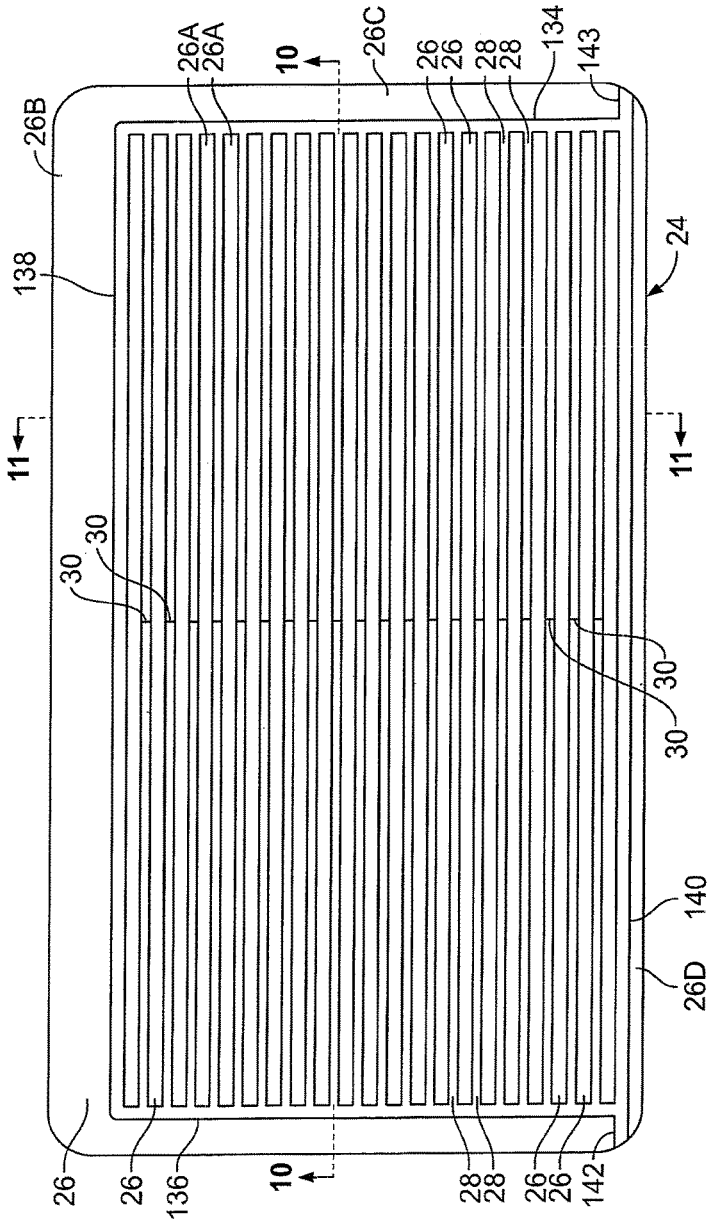
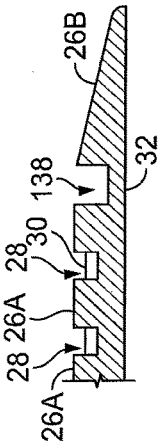


FIG. 9

FIG. 10



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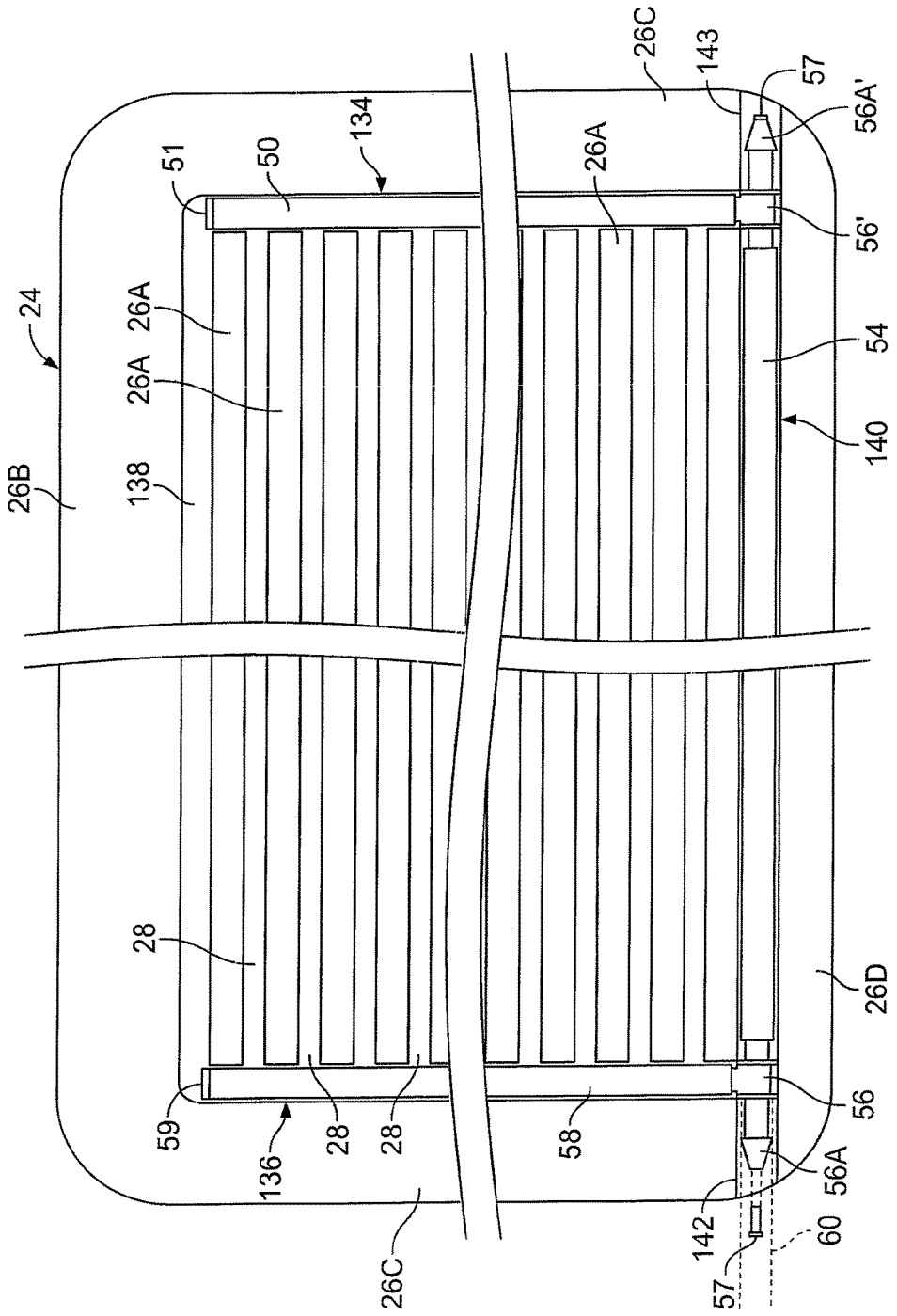
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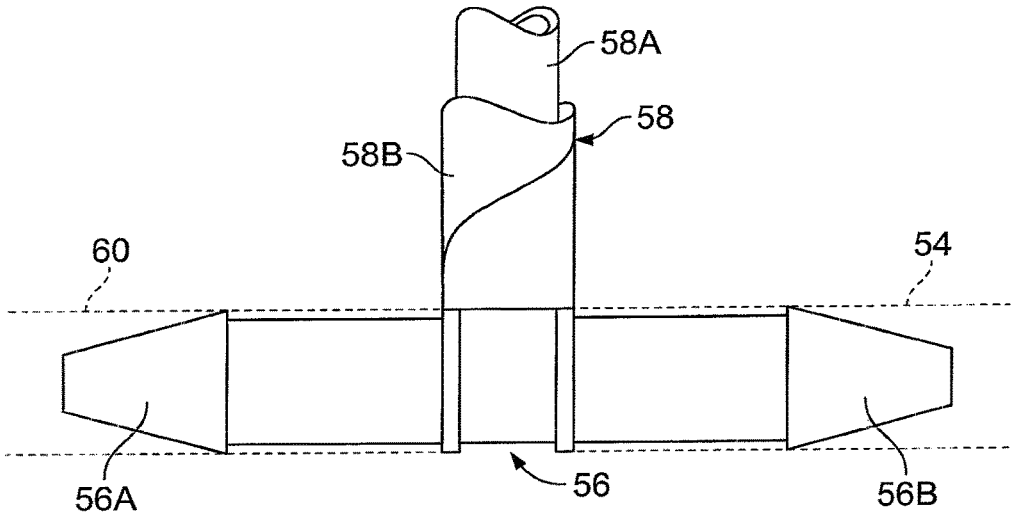
FIG. 12



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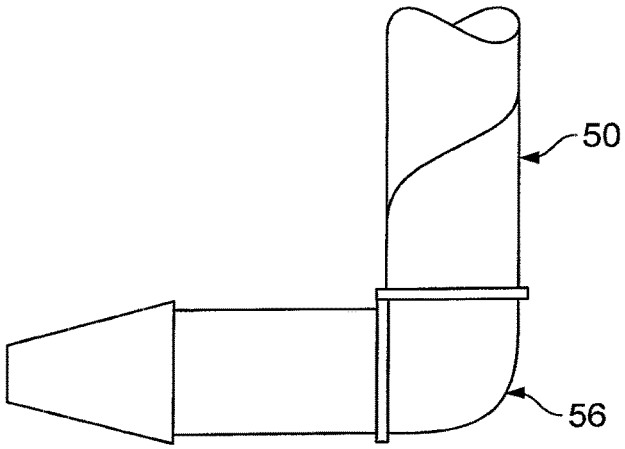

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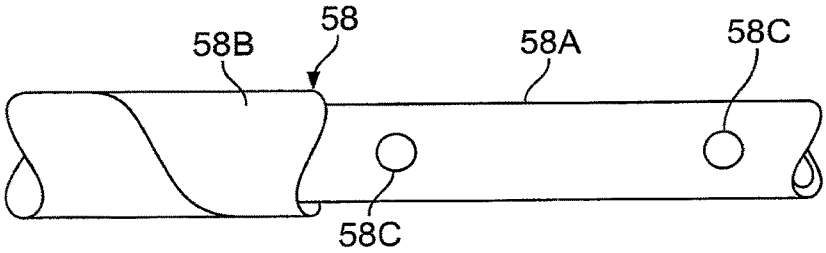


FIG. 15

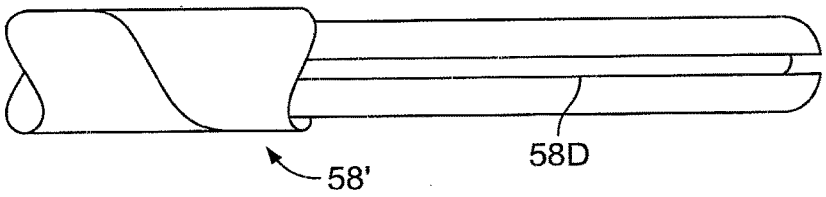


FIG. 16

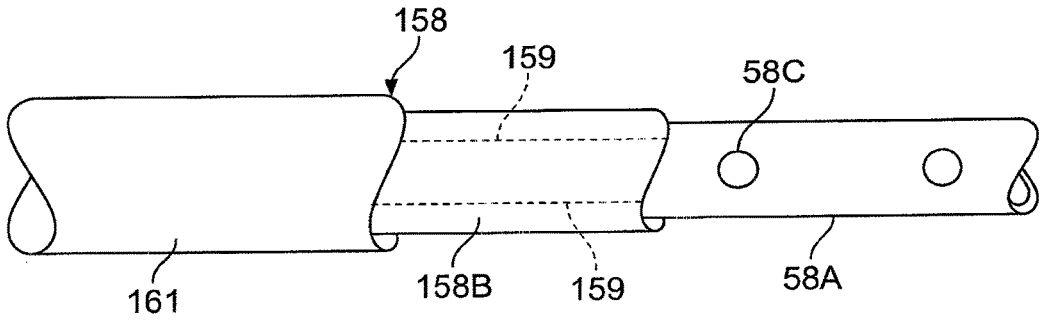
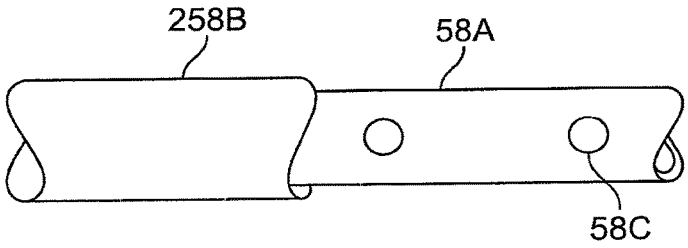


FIG. 17



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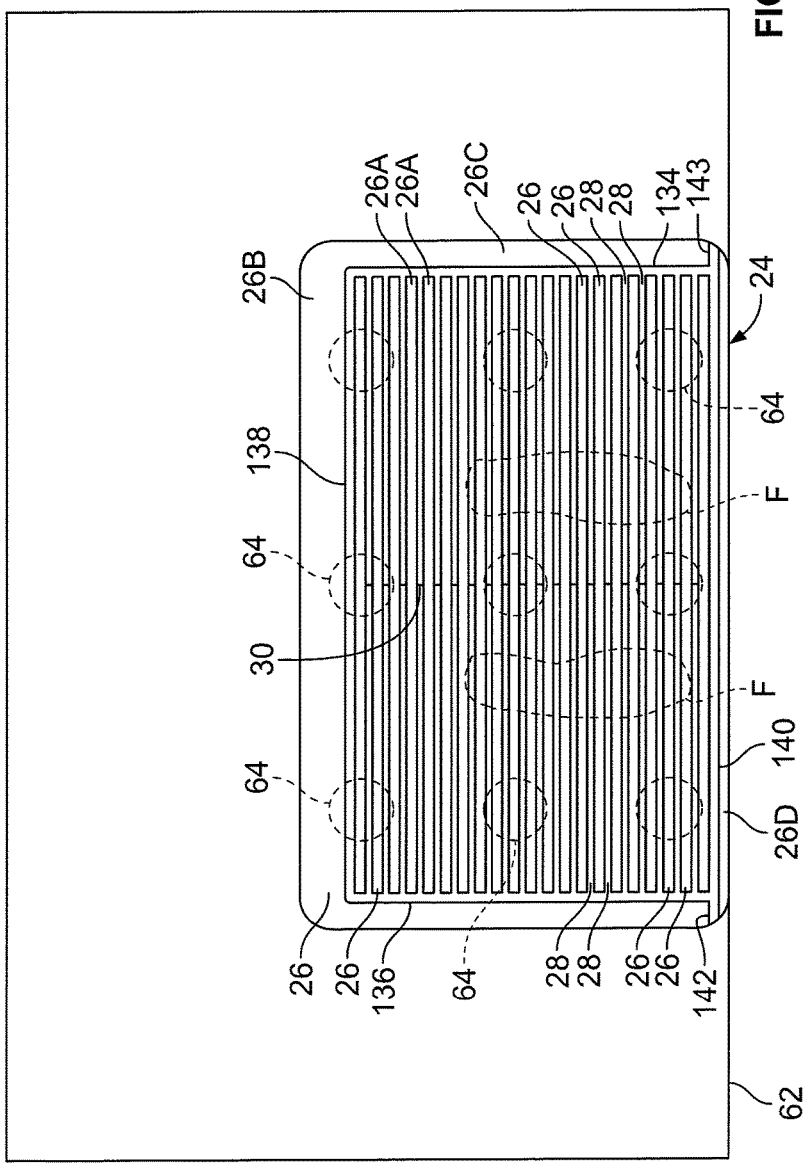
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FIG. 19

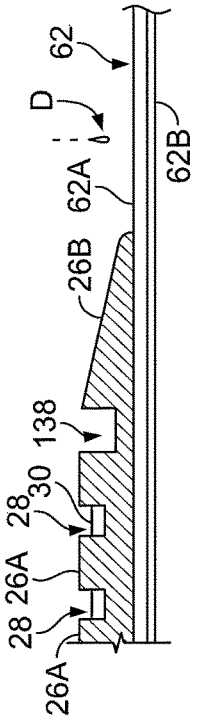
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FIG. 20

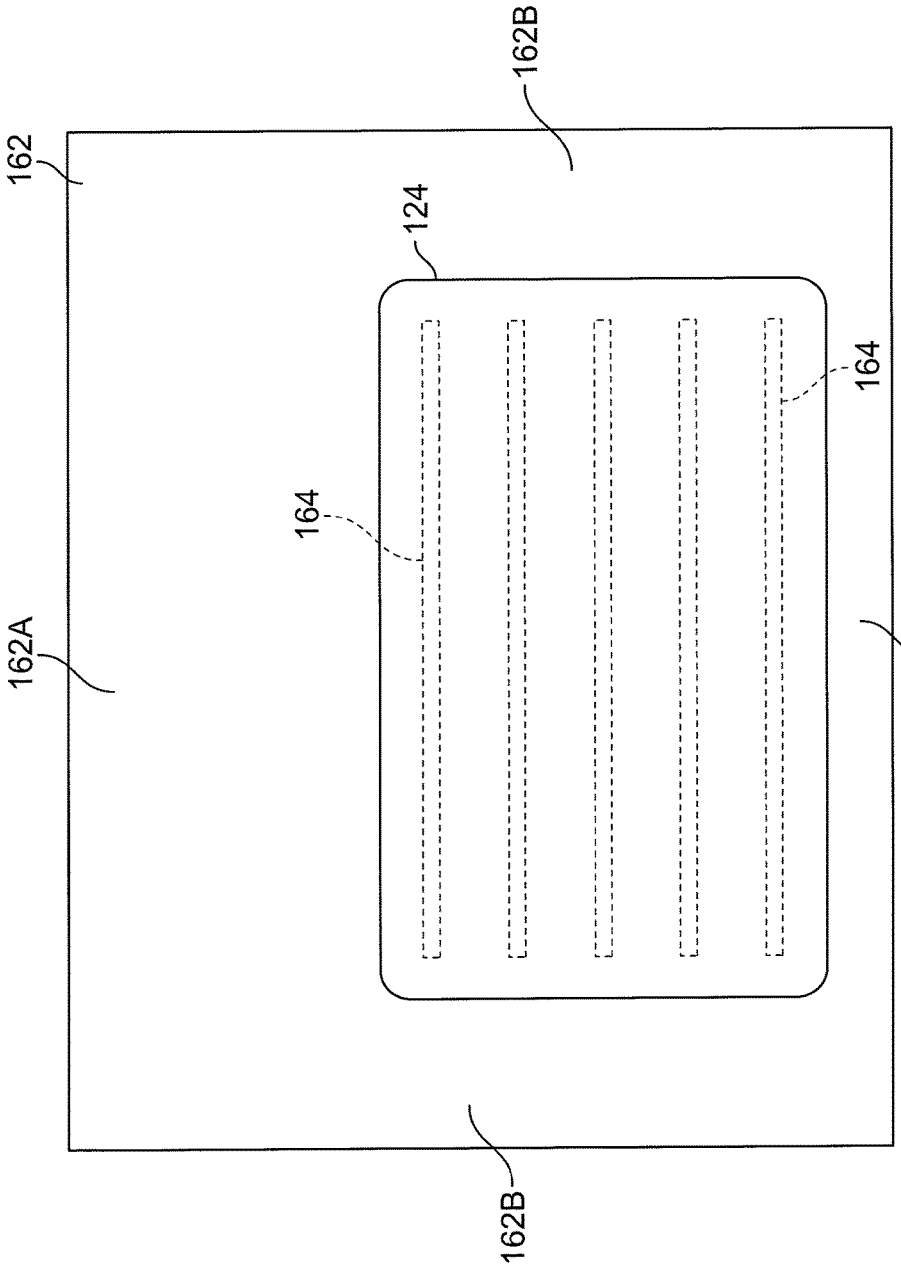

FIG. 21

FLUID HANDLING DEVICE AND METHOD

CROSS REFERENCES TO RELATED APPLICATIONS

This application is a continuation-in-part application of U.S. patent application Ser. No. 12/869,305 filed 26 Aug. 2010, now U.S. Pat. No. 8,663,782 which claims the benefit of U.S. Provisional Patent Application Ser. No. 61/287,255, filed 17 Dec. 2009, and which is a continuation-in-part application of U.S. patent application Ser. No. 11/935,117, filed 5 Nov. 2007 (issuing 31 Aug. 2010 as U.S. Pat. No. 7,785,692), which is in turn a continuation-in-part application of U.S. patent application Ser. No. 11/210,808, filed 25 Aug. 2005 (issuing 6 Nov. 2007 as U.S. Pat. No. 7,291,376), which is in turn a continuation-in-part of U.S. patent application Ser. No. 10/911,935, filed 4 Aug. 2004, now abandoned the contents of all being hereby incorporated by reference herein.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to materials and methods for handling fluids released during a procedure or in various other environments.

Description of Related Art

During various procedures fluids are released, which often fall onto the floor. For example, during a surgical procedure, not only can blood and other body fluids spill onto the floor, some procedures irrigate a surgical site with copious amounts of saline solution, which is then allowed to spill onto the floor.

It is highly desirable to quickly get these fluids away from the surgeon's feet to reduce the risk of slipping. Also, fluids released during surgery can spread infections and this risk is greatly enhanced the longer the surgeon stands or walks in these fluids. In the past surgical assistants have used existing surgical suction devices to vacuum these fluids. However, this method is not only inefficient but produces much distracting noise. Other known methods include placing towels or blankets on the fluid puddles, but this is time-consuming and requires the surgeon to step away and then stand on soaking material, which is both uncomfortable and increases the risk of tripping, as well as infection.

In addition, musculoskeletal disorders (MSDs) resulting from prolonged standing in the work place present not only a challenge to our health system in economic terms (workers compensation claims), but also place a significant burden upon the productivity, safety and health of the individual worker in the health-care environment. MSDs are injuries and illnesses that affect muscles, nerves, tendons, ligaments, cartilage and joints, spinal discs, blood vessels and bones. MSDs are not usually caused by acute trauma, but occur slowly over time due to repeated trauma to the soft tissues. Work-Related Musculoskeletal Disorders (WMSDs) are MSDs that are caused or made worse by work methods and environment. WMSDs can occur when the physical capabilities of the worker do not match the physical requirements of the job. The discomfort due to a WMSD often improves following medical treatment. Changing the work environment in order to alleviate stresses which led to the symptoms will help as well.

There have been many independent journal articles & studies, most focusing on the benefits of anti-fatigue matting (ergonomics) utilized in the work place. For example, OSHA (Occupational Safety and Health Administration) has identified static posture, contact stress and awkward postures as some of the potential workplace risk factors that cause MSDs. In the repealed "OSHA-Ergonomic Program Final rule", prolonged and static standing was identified as a risk factor and anti-fatigue matting was a control method for that risk factor.

Various other environments exist where a person may be standing during a procedure and where fluid may be spilled in the vicinity of where the person stands. For example, boaters may stand on a deck that is periodically sprayed or splashed by seawater. In some cases the boater may need to operate, repair or clean equipment and seawater may drain from the equipment during the procedure.

Also fishermen and hunters may need to clean, dress and prepare their catch or kill. In such cases fluids may run onto the ground or floor due to the release of body fluids or water used to clean the work site. Butchers will experience a similar situation when cutting and dressing meat at a butcher shop.

In addition, many technicians and hobbyists in the automotive field, gun repair/maintenance field, or other mechanical repair fields may spill fluids used to clean parts or may spill fluids used by the machinery (hydraulic fluid, coolant, brake fluid, transmission fluid, refrigerant, etc.).

Ordinary consumers may also deal with spills in the vicinity of where the person stands. Spilled fluids are often encountered when preparing foods or using the sink in a kitchen. In addition, various cleaning or repair tasks conducted throughout the house, yard or garden may involve fluid spills as well.

In U.S. Pat. No. 4,765,670 an auto mat has a number of grooves that all slope in the same direction to fill a sump formed along one edge of the mat. The reference recognizes that this sump can overflow and therefore suggests connecting the sump to a drainage tank.

In U.S. Pat. No. 6,719,348 flooring **10** is installed over a number of storage compartments **42** in the back of a motor vehicle. The top of the flooring has a number of grooves **16** arranged in a herringbone pattern and feeding two central channels **14**. Fluids falling on the flooring **10** flow through grooves **16** and channels **14** into a sump **40** built into the rear of the vehicle.

In U.S. Patent Application 2002/0092563 a crowned, non-absorbent splash pad **42** is placed on a base with raised center **26** and radial drainage channels **28**, which feed into lower peripheral channel **30**. Fluid-removing suction tubing **50** is connected to the lower channel **30**. The base is not meant to support the weight of a person.

In U.S. Patent Application 2003/0068463 a disposable, surgical floormat can be affixed to a surface using adhesive material **28** attached to a carrier sheet **26** and protected with removable liner sheet **29**. Cover **60** provides a non-slip, water-resistant surface, while layers **30**, **40**, **50** gradually decrease in overall length and width, creating a "pyramid" effect.

In FIG. 6 of U.S. Patent Application 2004/0091674 a corrugated anti-fatigue mat has drainage holes **240**.

In U.S. Pat. No. 4,811,937, operating room personal stand on a floor through which fluids pass to a slightly inclined fluid receiving surface. Fluids are directed into a trough, and evacuated through a drain which is connected to a suction device.

In U.S. Pat. No. 6,102,073 a porous, flexible mat **34** rests atop a grid **32**. The grid **32** is supported by a base **12** with studs **30**, which defines a floor **20** formed of three sloped segments **22**, **24**, and **26** along which fluids will flow. Fluids directed onto the mat will flow onto the floor **20**, where they will be withdrawn through fluid outlet **28** by a suitable suction device.

In U.S. Pat. No. 6,568,419, a broad, shallow vessel **28** is used to collect fluids that pass through a foot pad **24** made of a sturdy, non-woven mat **54** that operating room personnel stand on. Fluids are removed from the vessel **28** by a drainage system **26** and stored in a collection tank **80**.

In U.S. Patent Application 2003/0232175 a floor mat **100** has four folding panels **110**, **120**, **130**, **135** with fluid-capturing recesses **290** and beveled edges **295**.

In U.S. Pat. No. 6,726,190, suction cups **26** on the bottom surface **14** of a mat **20** restrict movement on the floor, and fluids can pass into holes **30** in the mat.

In U.S. Pat. No. 5,080,956 a non-porous sheet **30** made of bubble-pack material channels liquids **34** onto absorbent sheet **20**.

In U.S. Pat. No. 5,028,468 a thin plastic layer **16** is inserted into an envelope **12** with an absorbent surface **14** to provide an anti-fatigue surface for surgical personnel and a means of floor protection from fluids. The thin plastic layer **16** can be removed and re-used, while the envelope **12** is discarded after each use.

In U.S. Pat. No. 6,245,697, protective, flexible mats are used for absorbing liquids, and may contain non skid material.

SUMMARY OF THE INVENTION

In accordance with the illustrative embodiments demonstrating features and advantages of the present invention, there is provided a device for handling fluids. The device includes a floormat having an opposing pair of surfaces including a plurality of edges, a topside and an underside, and being formed, at least in part, of compressible and resilient material. The topside having a spaced plurality of channels feeding at least one gutter on a side of the gutter that has a height at least as great as the opposite side thereof. The channels being sized to avoid a risk of tripping. The topside having a central region and a border region. The central region occupying most of said topside. The central region between the channels having ridges with peaks with most of their lengths lying within an area that is substantially flat. The at least one gutter having at least one outlet for draining fluid from the gutter. The border region lying along the plurality of edges and encircling the central region. The gutter lying alongside a first one of the plurality of edges. Portions of the border region spaced from the first one of the plurality of edges having an outwardly tapered perimeter and having a height no greater than that of the at least one gutter.

In accordance with another aspect of the invention, there is provided a device including an absorbent sheet and a floormat with opposing surfaces. The floormat is formed, at least in part, of compressible and resilient material. The absorbent sheet is attached to a given one of the opposing surfaces of the floormat. At least part of the absorbent sheet is stacked to extend peripherally beyond the floormat.

In accordance with another aspect of the invention, a method is provided for handling fluids released during a procedure. The method employs a floormat and an absorbent sheet. The method includes the steps of placing the floormat and absorbent sheet where a user is expected to stand during the procedure. The floormat and absorbent sheet are stacked with at least part of the absorbent sheet extending beyond the floormat. The method also includes the step of standing atop the floormat and absorbent sheet during at least part of the procedure. Another step is absorbing into the absorbent sheet, fluids that fall onto the absorbent sheet during the procedure. The method also includes the steps of vacating the floormat and absorbent sheet, and discarding them before starting another procedure.

By employing equipment and methods of the foregoing type, fluids released during surgery or other procedures can be handled in a highly effective and efficient manner. In one embodiment a rectangular floormat with rounded corners is made of an elastomeric, material for reducing fatigue and increasing comfort. The mat overlays an absorbent sheet. In some simple embodiments the floormat may have a flat topside and underside.

In another embodiment the floormat has a relatively flat topside, except for a number of longitudinal channels. The floors of these channels are sloped away from a central peak so that fluids released during a procedure flow into the channels and away from the center of the mat. For this embodiment, the floormat has rounded corners and is formed of a compressible and resilient material to reduce a user's fatigue.

In another embodiment, the floormat has a crowned central section, which is integral with a tapered apron that encircles the central section. The apron is formed with a number of shallow channels that run from the outside border of the central section to the edge of the apron.

In the latter two embodiments fluids eventually drain into a gutter that runs along the periphery of the mat. The gutter can have one or more outlet gutters so that the fluid can train to a single location away from the mat. In one embodiment, the gutter can be fitted with drainage pipes that lead to the outlet gutter. In a disclosed embodiment these drainage pipes will have apertures that are aligned with drainage channels and the pipes can be covered with a material that acts as a filter and noise suppressor. A suction hose can be attached to the drainage pipes to draw a away the draining fluid.

All of these floormats can be stacked together with an absorbent sheet. The absorbent sheet is typically longer and wider than the floormat and will extend peripherally away from at least three sides of the floormat. In some embodiments the front edges of the floormat and absorbent sheet will be coterminous so the absorbent sheet does not impinge upon obstructions in the work area, such as the legs of a surgical table.

In the disclosed embodiment, the absorbent sheet has a fluid impermeable layer laminated to an absorbent layer. This fluid impermeable layer may have a slip resistant surface to avoid falls. The floormat and absorbent sheet can be attached by adhesive or mechanical fasteners or, in some cases, remain unattached so their relative positions can be easily adjusted.

Fluid that may spill during a procedure can be absorbed by the absorbent sheet, either directly or indirectly after draining off the floormat. In some embodiments fluids falling on the floormat can be removed by a suction tube connected to drainage pipes installed on the floormat.

BRIEF DESCRIPTION OF THE DRAWINGS

The above brief description as well as other objects, features and advantages of the present invention will be more fully appreciated by reference to the following detailed

description of presently preferred but nonetheless illustrative embodiments in accordance with the present invention when taken in conjunction with the accompanying drawings, wherein:

FIG. **1** is a plan view of a floormat in accordance with the present invention;

FIG. **2** is a cross-sectional view taken a long line **2-2** of FIG. **1**;

FIG. **3** is detailed, fragmentary, cross-sectional view of the left portion of the floormat of FIG. **2**;

FIG. **4** is a cross-sectional view taken a long line **4-4** FIG. **1**;

FIG. **5** is a bottom view of the mat of FIG. **1**.

FIG. **6** is a fragmentary, cross-sectional view taken a long line **6-6** FIG. **1**;

FIG. **7** is a fragmentary, cross-sectional view taken a long line **7-7** FIG. **1**;

FIG. **8** is a detailed, fragmentary, cross-sectional view of a portion of a floormat with a recessed suction cup that is an alternate to that of FIG. **2**,

FIG. **9** is a plan view of a floormat that is an alternate to those described above; and

FIG. **10** is a sectional view taken long line **10-10** of FIG. **9**;

FIG. **11** is a cross-sectional view taken long line **11-11** of FIG. **9** of a fragment of the floormat;

FIG. **12** is a detailed plan view of the floormat of FIG. **9** with portions broken away and with various tubes installed;

FIG. **13** is a plan view of a T-fitting in FIG. **12**;

FIG. **14** is a plan view of an elbow that may be used in the floormat of FIG. **12**;

FIG. **15** is a side view of a fragment of a tube in FIG. **12**;

FIG. **16** is a side view of a tube that is an alternate to that of FIG. **15**;

FIG. **17** is a side view of a tube that is an alternate to that of FIGS. **15** and **16**;

FIG. **18** is a side view of a tube that is an alternate to that of FIGS. **15-17**;

FIG. **19** is a plan view of a device employing the floormat of FIG. **9** overlaying an absorbent sheet, in accordance with principles of the present invention;

FIG. **20** is a cross-sectional view of a fragment of the device of FIG. **19**; and

FIG. **21** is a plan view of a device that is an alternate to that of FIG. **19**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. **1-7**, the illustrated floormat **10** may be made of an elastomeric material such as PVC, or a rubber, either synthetic or natural. Other materials such as polyurethane foam, a "memory" foam as well as materials commonly used in anti-fatigue mats are contemplated also. It is also desirable to make the mat material nonflammable, and to avoid allergic reactions, latex-free. In addition, the mat material contains static-dissipative properties (109 ohms per sq. ft.) and an anti microbial agent. Further, the mat material may be non-staining, UV resistant and resistant to most chemicals. The disclosed embodiment, designed specifically for anti-fatigue use and surface drainage, is made with chemically expanded closed-cell foam, manufactured with 100% virgin raw material having the specifications outlined in Table 1. It is appreciated that the specifications may vary for other embodiments.

TABLE 1

GAUGE:	650 mils (⅝ inch)	Tolerance +/−12 mils (+/−0.012 inch)
WEIGHT/AREA:	128 oz/yd2	Tolerance (+/−5 oz./yd2 minimum)
DENSITY:	17 lb/ft3	Tolerance ± 1 lb/ft3
HARDNESS:	40-50	Durometer Hardness ASTM D-2240-86
TENSILE STRENGTH:	125 lb/in2 minimum	Tensile Strength., Die 'C' ASTM D-638-90
ELONGATION @ 100%:	130%	Elongation ASTM D-638-90
TEAR STRENGTH:	30 lb/in2 minimum	Tear Strength ASTM D-1004-90
FLAME RESISTANCE:	Pass	Federal Motor Vehicle Safety Standard 302 Flame Resistance
FLAME RESISTANCE:	Pass	Methenamide Pill Test DOC FF 1-70
LIMITED OXYGEN INDEX:	>24%	ASTM D-2863-77
OPERATING TEMPERATURE RANGE:	30° F.-110° F.	Manufactured by an ISO 9001:2000 certified company

It is highly desirable to provide a mat **10** that is disposable and intended for a single use. Accordingly, the mat material need not be highly durable and wear-resistant. For such disposable models, wear resistant coatings are not contemplated. To keep mat **10** sanitary, it can be cleaned, disinfected or sterilized, as appropriate. Thereafter mat **10** can be rolled up or packaged flat in a plastic material before shipment.

Mat **10** as shown is 36 inches long (0.9 m) and 17 inches (0.4 m) wide, although other overall dimensions are contemplated for other embodiments. Mat **10** has a central section **12** encircled by an annular, tapered apron **14**. Apron **14** is about 3.5 inches (8.9 cm) and has a slope that ranges between about 4 degrees to 30 degrees.

Central section **12** is crowned, that is, it slopes downwardly in every direction away from its apex **20**, which is located at the center of the mat **10**. In one embodiment the radius of curvature along the longitudinal centerline of the central section **12** is about 260 inches (6.6 m). In that embodiment the radius of curvature along a transverse centerline is about 58 inches (1.5 m). The advantages of crowning as described hereinafter will occur when the radius of curvature in central region **12** is less than a maximum of 500 inches (1.3 m). In one embodiment central section **12** has a thickness or height of 0.75 inch (1.9 cm) at its apex **20**. It is desirable to have the height or thickness at apex **20** in the range of 0.5 to 1.5 inches (1.3 to 3.8 cm). With a thickness at apex **20** of about 0.75 inch (1.9 cm), the height or thickness of the central section **12** at its perimeter may be about 0.35 inch (9 mm), but for various other embodiments it will be desirable to keep the thickness at the perimeter in a range of 0.2 to 0.6 inch (5 to 15 mm).

The margin between central section **12** and apron **14** is marked by an optional, annular groove **16**. The groove **16** runs parallel to the short sides and about 4 degrees to the long sides of mat **10** except at its rounded corners. Projecting outwardly and transversely from groove **16** across apron **14** are a number of channels **18**. The width and depth of channels **18** are similar to that of groove **16**, although they can be sized differently in other embodiments. In one embodiment channels **18** were 0.25 inch (6 mm) wide and 0.06 inch (1.5 mm) deep, although this dimension can vary in alternative embodiments. It is advantageous to have these channels **18** in a range of ⅛ through ½ inch (3 through 13 mm) wide and 0.03 to 0.25 inch (0.7 to 6 mm) deep. In most embodiments, central section **12** and apron **14** will be

integral components that are molded at the same time to form a common core. A series of gutters **34**, **36**, **38**, and **40**, in apron **14** around central section **12** communicate with the distal end of channels **18** and may be fitted with an optional drain assembly, having a structure that will be described presently. Outlet gutter **42** communicates with the junction of gutters **40** and **36** and allows drainage off floormat **24**. In some embodiments the outlet gutter can be positioned differently and more than one outlet gutter may be employed.

A number of integral, molded suction cups **22** project from the underside of mat **10**. In this embodiment suction cups **22** are molded simultaneously with the main body of the mat, that is, with central section **12** and apron **14**. Suction cups **22** may be 0.5 to 1.5 inches (1.3 to 3.8 cm) in diameter, although other sizes are possible. In this embodiment three equidistant suction cups **22** are placed along the centerline on the underside of central section **12**. On either side of this centerline two sets of four equidistant suction cups **22** are placed in lines parallel to the centerline to form a staggered, diamond pattern of suction cups. In other embodiments a different number of suction cups may be laid in a different pattern.

In some embodiments, suction cups will not be employed but the underside of the mat will have a nonslip surface. As shown in phantom in FIG. **5**, a double sided adhesive tape **21** may be attached to the underside of the mat to keep it in place. The adhesive on the side of the tape attached to the mat would be a permanent adhesive, while the adhesive on the exposed surface would be repositionable. Tapes of this type are available from 3M. A paper liner could be employed to cover the adhesive during shipment and storage. Alternatively, the entire underside of the mat may be finished with a tacky substance or an adhesive. In other embodiments, the mat material itself may be inherently nonslip. In still other embodiments the underside may be roughened or may have a large number of nubs that grip the floor. Alternatively, the underside may have a plurality of domed depressions that create suction when pressed onto the floor. Moreover, the top side of the mat **10** (section **12** and apron **14**) can have a nonslip finish as well, which can be accomplished by providing a roughened surface. Alternatively, the mat material may contain a chemical agent, giving all surfaces of the mat a nonslip finish.

Various embellishments and decorations are contemplated for mat **10**. In keeping with customary colors for operating rooms, mat **10** can be colored blue either by incorporating a die or by applying a colored coating to the mat. In some embodiments, central section **12** and apron **14** may be colored differently. Also, advertising logos may be placed at various positions on mat **10**. For example, a drug brand may be advertised in large letters on the central section **12**.

Referring to FIG. **8**, a modified mat **10'** is arranged in a manner similar to that shown in FIG. **1**. In this Figure, components corresponding to those previously illustrated in FIG. **1** will have the same reference numerals but marked with a prime ('). In particular, suction cup **22'** has a shape similar to that previously illustrated but is located in a recess **24** on the underside of mat **10'**. Suction cups **22'** can be arranged in a pattern similar to that shown for the mat **10** of FIG. **1**.

Referring to FIGS. **9-11**, another floormat **24** is illustrated, again having rounded corners. Floormat **24** may be made of material similar to that described above in connection with the other embodiments and will have the previously mentioned adhesive tape (tape **21** of FIG. **5**). In this embodiment the topside **26** is relatively flat except for a number of longitudinal channels **28**. While twenty such channels are illustrated, other embodiments can have a greater or lesser number. Ridges **26**A of topside **26** are located between channels **28**. Gutters **134**, **136**, **138**, and **140** encompass regions **26**A and communicate with the distal ends of channels **28** (regions **26**A being referred to as a central region having channels **28**).

Outer border regions **26**B, **26**C and **26**D are located to the outside of the gutters **134**, **136**, **138**, and **140**, which gutters are arranged similarly to the gutters of FIG. **1**. Outlet gutter **142** is aligned with gutter **140** at its intersection with gutter **136**. Outlet gutter **143** is aligned with gutter **140** at its intersection with gutter **134**. In some embodiments one of the discrete outlet gutters **142** or **143** may be eliminated.

The floors of each of the channels **28** have a central peak **30** equidistant from the channel ends for dividing any fluids that enter the channels. The channels **28** are illustrated with a rectangular cross-section, although in other embodiments the cross-section may be semicircular, oval, polygonal, etc. Additionally, the width of the channels may vary along their lengths, in some embodiments.

The peaks of border regions **26**B, **26**C and **26**D are all at substantially the same elevation as central region **26**A. These outer regions **26**B, **26**C and **26**D are beveled, sloping outwardly from their peaks to form the outer edge of the mat **24**. Outer region **26**B is approximately 2 inches (51 mm) wide, while outer region **26**D is around ½ inch (13 mm) wide. Outer regions **26**C are each 1½ inches (38 mm) wide. All these dimensions may vary in other embodiments.

Channels **28** have a depth that increases for directions away from central peaks **30**. Moreover, the elevation of the floors of channels **28** decline for directions away from central peaks **30**. Accordingly, fluid entering channels **28** flows away from the central peak **30** to the channel ends and into the into the gutters **134** and **136**, and, if present, the drainage pipes shown in FIG. **12**.

In one embodiment floormat **24** has an overall length of 35 inches (0.9 m) and an overall width of 22 inches (0.56 m). In this embodiment the overall thickness of floormat **24** (measured at ridges **26**A of topside **26**) was ⅝ inch (16 mm). The channels **28** are 0.2 inch (5.1 mm) wide and are distributed with a channel to channel spacing (measured from the center of one channel to the center of another) of 0.7 inch (18 mm). The depth of the channels **28** varied linearly from a minimum of ⅛ inch (3.2 mm) at central peaks **30** to a maximum of ⅜ inch (9.5 mm) at the outlet ends. It will be appreciated that these dimensions and proportions can be varied for other embodiments.

The foregoing mat **24** may be made with nonslip surfaces in the manner described above for the other embodiments. Preferably, the underside **32** of the mat **24** will employ the double sided adhesive tape as shown in phantom in FIG. **5** and described for the other embodiments. Also, in some embodiments the entire underside **32** of the mat **24** may be finished with a tacky adhesive as described for the other embodiments, in order to keep the mat in place. Alternatively, the underside **32** of the foregoing mat **24** can have suction cups similar to those described above.

Gutters **134**, **136**, **140**, **142** and **143** are each ½ inch in width to allow room to house the optional drainage assembly illustrated in FIG. **12**. In most embodiments, gutter **138** will remain empty and will not be used to house any tubing or drainage pipes. Thus gutter **138** may be narrower than the other gutters, having a width of 0.3 inch (7.6 mm).

Referring to FIGS. **12-15**, FIG. **12** shows the mat of FIG. **9** fitted with a drain assembly, which is shown in further detail in FIGS. **13-15**. In particular, drainage pipes **50** and **58**

will be placed in gutters **134** and **136**, respectively. Pipes **50** and **58** may have identical structure and may be include tubing made of PVC or other materials.

Plug **59** is 0.47 inch in length (1.2 cm) and will be inserted in the distal end of pipe **50**. The other end of pipe **58** will be fitted with one branch of T fitting **56**, whose two other aligned branches lie in gutters **140** and **142**. The branch of fitting **56** lying in gutter **142** (gutter **142** also referred to as an outlet) is shown as a conduit terminating in a conically flared head **56**A designed to lock into tubing **60**. When shipped, head **56**A is sealed with removable plug **57**, shown removed to accommodate tubing **60**.

FIG. **13** shows the opposite branch, also in the form of a conduit terminating in a conically flared head **56**B. The third branch of T fitting **56** is the same as the other two branches and its conical head is inserted into pipe **58**. In this embodiment the outside diameter of the conical heads (e.g. head **56**A) is 5/16 inch (8 mm), although other dimensions may be employed in other embodiments.

Plug **51** will be inserted in one end of pipe **50**. The other end of pipe **50** will be fitted with one branch of T fitting **56'**, which is identical to fitting **56** on pipe **58**. The two other aligned branches of fitting **56'** lie in gutters **140** and **143**. The branch of fitting **56** lying in gutter **143** (gutter **143** also referred to as an outlet) is shown as a conduit terminating in a conically flared head **56**A' designed to lock into tubing, but in this case sealed with plug **57**. Thus, a user can conveniently choose to connect tubing **60** to either head **56**A or **56**A'.

In some cases, fitting **56'** (or fitting **56**) may be replaced with elbow **52**, shown in FIG. **14**. In this case the proximal end of pipe **50** in gutter **134** will communicate through elbow **52** to pipe **54** in gutter **140**, without communicating to gutter **143**. Pipe **54** may be a simple plastic tube without the apertures or sleeves associated with pipes **50** and **58**.

Referring to FIG. **15**, drainage pipe **58** comprises plastic tubing **58**A covered with a porous sleeve **58**B. Tubing **58**A may be made of a flexible plastic such as polyurethane or polyvinyl chloride with an outside diameter of 0.4 inch (1 cm), although other materials and dimensions may be employed in other embodiments. Sleeve **58**B may be a polyester knit formed from a strip that is spirally wound and stitched to form a tube. Alternatively, a fabric strip can be curled back and stitched to form a straight, longitudinal seam. In other embodiments sleeve **58**B may be knit or woven directly into a tubular form. In all embodiments, sleeve **58**B will serve as a noise reducer and debris filter. In some embodiments, sleeve may be a chamois-like material such as a non-woven viscose fabric.

Tubing **58**A has a series of longitudinally aligned apertures **58**C positioned to coincide with the outer end of channels **28**, that is, one aperture for each of the channels **28**. The diameter of apertures **58**C may vary, though the preferred diameter is 1/16 inch (1.59 mm). In other embodiments these apertures may be replaced with the longitudinal slit **58**D shown in FIG. **16**, which is a feature of a pipe **58'** that is otherwise identical to that shown in FIG. **15**. Sleeve **58**B prevents debris from passing through either apertures **58**C (FIG. **15**) or slit **58**D (FIG. **16**). Also, sleeve **58**B acts as a dampener to provide some noise suppression

Referring to FIG. **17**, an alternate drainage pipe **158** has the same tubing as shown in FIG. **15** (tubing **58**A). However, the spiral wrapped sleeve **58**B is replaced with a strip **158**B made of the same material. Strip **158**B is laid longitudinally over apertures **58**C and partially wrapped around the tubing **58**A (for example 270°), leaving a gap between edges **159**. In this embodiment strip **158**B is a synthetic chamois-like material (e.g., nonwoven viscose fabric) designed to filter particles that might enter into aperture **58**C, as well as providing mechanical dampening and noise suppression. Strip **158**B is covered and held in place by graded sleeve **16**, which also offers some coarse filtering. In one embodiment sleeve **161** was braided from PET yarns (e.g., a Flexo PET sleeve from Flextech Inc of Sparta, N.J.).

Referring to FIG. **18**, previously mentioned tubing **58**A is covered with a sleeve **258**B made of synthetic chamois-like material (e.g., nonwoven viscose fabric) either formed originally as a tube, or formed into a tube by joining two edges of an elongated strip. Again, sleeve **258**B provides filtering and noise suppression.

Referring again to FIG. **12**, flexible tubing **54** is shown lying in gutter **140** and connecting between the right branch of fitting **56** and the left branch of fitting **52**. The left branch of fitting **56** will lie in gutter **142** and connect to a suction tube **60** (shown in phantom). Tubing **54** will lack the apertures and sleeve of pipes **50** and **58** and may be held in place by an adhesive such as cyanoacrylate or the like.

Pipes **50** and **58** may also be glued in place but only with a narrow bead of glue so that the sleeves (e.g., sleeve **58**B) remain permeable and the apertures (e.g. apertures **58**C (or **58**D) will point at a depressed angle of elevation of about 45° below horizontal (between a 4 and 5 o'clock position). It will be appreciated that pipe **50** will be made and installed in a similar manner.

It will be further appreciated that although an outlet is shown in one corner of the mat as gutter **142**, the outlet can be placed anywhere along the gutters of the mat. Further, multiple outlets may be created to allow the flexibility of alternate outlets or to permit connection of additional suction tubes **60**. Some embodiments may have multiple outlets that have removable plugs or dams so the user can choose where to connect one or more suction tubes **60**. On the other hand, some embodiments will have only one outlet gutter.

The foregoing drainage pipes may be fitted in the gutters of the embodiment of FIGS. **1-7**. The gutter system of FIGS. **1-7** has a similar configuration as described above with one significant exception: fitted in gutter **38** is a drainage pipe with apertures and sleeving as shown in FIG. **15** or **16**. Accordingly, the width of gutter **38** will be equal to the width of the other gutters. Consequently, previously mentioned caps **51** and **59** are replaced with elbows (not shown) that connect to this drainage pipe within gutter **38**. In addition, previously mentioned tubing **54** is replaced by a fourth drainage pipe, similar to that of FIG. **15** or **16**. For the pipes of FIG. **15**, the apertures **58**C are spaced to align with the outer end of channels **18**. Also, because gutter **42** is the only discrete outlet gutter the elbow of FIG. **14** will be installed at the junction between gutters **34** and **14**.

To facilitate an understanding of the principles associated with the foregoing apparatus, the operation of the embodiment of FIG. **12** will be briefly described. The above described mat **24** may be removed from its plastic packaging (not shown). The paper liners (not shown) are removed from the underside of the mat, exposing the repositionable adhesive tape (tape similar to tape **21** of FIG. **5**). The mat **24** can then be positioned and laid on the floor at the location where a user or other personnel are expected to stand. Stepping on mat **24** will cause the adhesive tape **21** to grip the floor and hold the mat **10** in place.

Mat **10** is made of resilient material that will increase comfort, reduce fatigue and, in general, ease the burden of standing during a long procedure. Also, channels **28** are relatively small and do not substantially degrade the cush-

ioning, anti-fatigue effect. Also, these channels **28** are sufficiently small to avoid any risk of tripping.

During the procedure fluids may fall onto mat **24**. Fluids tend to fall into channels **28** and flow away from peak **30** (FIG. **9**) toward gutters and **134**, and **136**. Suction applied by hose **60** through head **56**A will create a vacuum in pipes **50**, **54** and **58**. Accordingly, fluid flowing to the ends of channels **28** will be sucked into the apertures **58**C of pipes **50** and **58**. Since the apertures **58**C point slightly downwardly they will efficiently aspirate the draining fluid. Debris or other particles in the fluid will be filtered by sleeve **58**B (embodiment of FIG. **15**) or by sleeves **158**B and **161** (embodiment of FIG. **17**), or by sleeve **258**B (embodiment of FIG. **18**). Also, the foregoing sleeves can suppress noise caused by vibration in tubing **58**A.

The suction applied by hose **60** through head **56**A will create a vacuum in pipes **50**, **54** and **58**. Accordingly, fluid flowing to the ends of channels **28** will be sucked into the apertures **58**C of pipes **50** and **58**. Debris or other particles in the fluid will be filtered by sleeve **58**B (embodiment of FIG. **15**) or by sleeves **158**B and **161** (embodiment of FIG. **17**), or by sleeve **258**B (embodiment of FIG. **18**). Also, the foregoing sleeves can suppress noise caused by vibration in tubing **58**A.

Fluid in pipe **50** will flow through fitting **56'**, pipe **54** and fitting **56**, before being evacuated through hose **60**. Fluid in pipe **58** will flow through fitting **56** and be evacuated through hose **60**, as well. Hose **60** may be connected to a suction system such as may be found in a hospital operating room.

Consequently, the user will have a dry place to stand with less chance of contaminated, corrosive or infected fluids seeping through any foot covering worn by the user. Also, a dry surface will reduce the chance of slipping and falling

If the user is expected to work in several locations, multiple mats can be placed at those sites. Of course, mats can be provided for other assistants in the vicinity.

If pipes are not used in the drainage system, the fluids will be naturally drain through gutters **134**, **136**, **140** before exiting through outlet gutters **142** in **143** (unless one of the outlet gutters is blocked by a dam or other means)

The operations of the floormat **10** of FIGS. **1-7** will be briefly described. The above described mat **10** is laid on the floor next to a location where a user or other personnel are expected to stand. Stepping on mat **10** will cause the suction cups **22** to grip the floor and hold the mat **10** in place.

Mat **10** is made of resilient, material that will increase comfort, reduce fatigue and, in general, ease the burden of standing during a long procedure. In addition, while the apron **14** is thinner, it is still sufficiently thick to provide a comforting, anti-fatigue effect. Also, channels **18** (as well as groove **16**) are relatively small and do not substantially degrade the cushioning, anti-fatigue effect on apron **14**. Also, these channels **16** and **18** are sufficiently small to avoid any risk of tripping.

During the procedure fluids may fall onto mat **10**. Fluids falling on central section **12** will tend to shed from the surface and drain through channels **16** and **18**. Fluids eventually flow into gutters **36**, **38**, and **40** before exiting through outlet gutter **42**. Fluids falling on apron **14** will shed fluids directly or through channels **18**.

Referring to FIGS. **19** and **20**, the illustrated device employs previously mentioned floormat **24**, which bears reference numerals identical to those previously mentioned. As previously mentioned, floormat **24** is formed of a compressible and resilient material with an antimicrobial agent. It will be appreciated that in some embodiments floormat **24** may be replaced with the floormat shown in FIG. **1**.

Floormat **24** has a pair of opposing surfaces, the top one formed with a spaced plurality of channels **28** feeding intermediate gutters **134**, **136**, **138** and **140**, which in turn feed discrete outlet gutters **142** and **143**. As before, intermediate gutters **134**, **136**, **138** and **140** may be outfitted with pipes **50**, **54** and **58**, and the associated fittings shown in FIG. **12**. In that case, previously mentioned hose **60** provides a source of negative pressure.

Floormat **24** is shown stacked on rectangular absorbent sheet **62**. In this embodiment floormat **24** is 21.5 inches (0.55 m) wide and 35 inches (0.89 m) long, although the size of floormat **24** can be tailored to accommodate the relevant work area; that is, the region where a user is expected to stand. In the illustrated embodiment, absorbent sheet **62** is 36 inches (0.9 m) wide and 56 inches (1.4 m) long, although different sizes may be used in other situations depending upon the size of the relevant work area; specifically, the region where fluids may be expected to fall. In one embodiment absorbent sheet **62** is a medical mat from ESP Evolution Sorbent Products LLC of Chicago, Ill.; item no. 225SCB-PLY-FlagShip.

Absorbent sheet **62** is shown extending peripherally from three sides of floormat **24**, specifically, from the right and left sides along border regions **26**C, and from the posterior side along border region **26**B. In this embodiment the anterior side of floormat **24** along border region **26**D is coterminous with an edge of absorbent sheet **62**. This coterminous feature allows floormat **24** to lie close to the work area without absorbent sheet **62** bunching up on obstructions, such as the legs of an operating table, the wheel of an automobile, etc. In cases without nearby obstructions, absorbent sheet **62** may extend peripherally beyond the anterior side along border region **26**D. In some cases the size of absorbent sheet **62** can be custom trimmed with a scissor or by using optional perforations in the sheet.

Sheet **62** is shown having two layers, one with a fluid absorbent face **62**A and the other with a fluid impermeable face **62**B. Surface **62**A is adhesively attached to the underside of floormat **24** at nine circular spots **64**. The underside of floormat **24** is referred to herein as a given one of the opposing surfaces. In one embodiment the adhesive spots **64** employ a medium viscosity cyanoacrylate adhesive, e.g., Apollo 2077 type adhesive from Cyberbond LLC of Batavia, Ill. It will be appreciated that in other embodiments different types of adhesives may be used and the adhesive may be laid in a different pattern or in a continuous layer essentially matching the entire underside of floormat **24**. Some embodiments may use mechanical fasteners, such as staples, rivets, etc. In still other embodiments, absorbent sheet **62** will not be attached to floormat **24**, which will allow freedom to adjust their relative positions.

Layer **62**A may be a meltblown polypropylene material having an absorbency of 0.156 ml/cm2 (0.03 fluid ounces per square inch), although in other embodiments the absorbency can be in the range of 0.05 to 0.5 ml/cm2. The actual absorbency will be chosen depending upon the environment and the expected amount of fluid to be absorbed. In other embodiments layer **62**A may be made of other fibrous material such as spunbond plastics, felt, etc., or may be made of other woven or knitted fabrics using natural or synthetic fibers.

Layer **62**B faces down and may be a flexible sheet made of polyethylene or other materials. In most embodiments layer **62**B will be selected to provide fluid impermeability.

Layer **62**B may be bonded to layer **62**A and in most embodiments will have a slip resistant surface.

The foregoing device **24**/**62** may be used in an operating room where a surgeon must often deal with fluids spilling in the vicinity where the surgeon is standing. Many surgical procedures involve the discharge of bodily fluids or the washing or irrigation of various sites, all tending to result in spills, either intended or unintended. Keeping the surgeon's feet dry will reduce the danger of slipping and falling. Also spills occurring in an operating room may represent a biohazard and care must be taken to avoid seepage through footwear making contact with the skin. While handling fluid in the vicinity is an important consideration, preventing user fatigue is also important. The resilient surface presented by the foregoing floormat **24** will reduce user fatigue, while it and absorbent sheet **62** will also deal with spilled fluids.

Various other environments exist where a person may be standing during a procedure and where fluid may be spilled in the vicinity of where the person stands. For example, boaters may stand on a deck that is periodically sprayed or splashed by seawater. In some cases the boater may need to operate, repair or clean equipment and seawater may drain from the equipment during the procedure.

Also fishermen and hunters may need to clean, dress and prepare their catch or kill. In such cases fluids may run onto the ground due to the release of body fluids or water used to clean the work site. Butchers will experience a similar situation when cutting and dressing meat at a butcher shop.

In addition, many technicians and hobbyists in the automotive field, gun repair/maintenance field, or other mechanical repair fields may spill fluids used to clean parts or may spill fluids used by the machinery (hydraulic fluid, coolant, brake fluid, transmission fluid, refrigerant, etc.).

Ordinary consumers may also deal with spills in the vicinity of where the person stands. Fluids are often encountered when preparing foods or using the sink in a kitchen. In addition, various cleaning or repair tasks conducted throughout the house or the yard may involve fluid spills as well.

In all these instances one wishes to avoid standing in spilled fluids. In some cases avoiding the discomfort of wet feet is an important consideration, but in other instances the fluids involved can be hazardous or deleterious. For example, some fluids can be slippery and increase the danger of falling. Other fluids may be corrosive and can damage either footwear or the foot itself.

In operation, the device **24**/**62** of FIGS. **19** and **20** is placed at a workstation with absorbent sheet **62** down and floormat **24** up. Layer **62**B will have a slip resistant surface to avoid slippage of the device. A user will stand on floormat **24** facing anterior border region **26**D, as indicated by the outline of feet F. Although a user will feel most comfortable standing on floormat **24**, the user may occasionally step off the floormat and place one or more feet on absorbent sheet **62**.

As noted, the workstation may be adjacent an automobile, a surgical table, or other work area. The device **24**/**62** is oriented so the anterior border region **26**D is closest to the work area that the user is facing, as indicated by feet F. Thus, absorbent sheet **62** does not extend into the work area and impinge on obstructions such as the legs of a surgical table, an automobile wheel, or the like.

Floormat **24** may be optionally fitted with pipes as shown in FIG. **12** (pipes **50**, **54** and **58** in intermediate gutters **134**, **140** and **136**, respectively). Therefore, in the manner previously described, fluid falling on floormat **24** can drain through channels **28** into these pipes and eventually be sucked into a suction tube (tube **60** of FIG. **12**)

In addition, fluid may fall directly on absorbent sheet **62** as indicated by fluid drop D in FIG. **20**. Sheet **62** will have sufficient absorbency to accommodate fluid spills that might be expected at the workstation. In addition, for instances where no suction is used to remove fluids from format **24**, fluids may be shed through outlets **142** and **143** to be absorbed onto absorbent sheet **62**.

Once the procedure is completed, floormat **24** and absorbent sheet **62** can be folded or rolled in order to trap captured fluids within the device. Personnel can remove the mat **24** and sheet **62**, place it into a leakproof disposal bag and discard them. Often, the device **24**/**62** will require special handling since it may contain material considered corrosive or biological waste representing a danger of infection or contamination.

Referring to FIG. **21**, the illustrated embodiment has an absorbent sheet **162** that may be structured in the same manner as the one previously described (sheet **62** of FIG. **19**). Floormat **124** may be made of the same material as before and have the same overall width, length and thickness as the previously mentioned floormat (floormat **24** of FIG. **19**). In this embodiment floormat **124** has a flat topside and flat underside.

Floormat **124** and absorbent sheet **162** are stacked and attached together adhesively along five longitudinal lanes **164**, using an adhesive of the types described previously in connection with FIGS. **19** and **20**.

In this embodiment, absorbent sheet **162** has a somewhat different configuration, with posterior portion **162**A deeper and side portions **162**B narrower than that previously shown in FIG. **19**. Also, anterior portion **162**C is not coterminous with floormat **124** but provides an apron for capturing falling fluids. In cases where obstructions are encountered, portion **162**C may be folded, or severed and discarded.

In this embodiment the absorbent layer of sheet **162** faces up and its fluid impermeable layer faces down. In some cases the device of FIG. **21** may be designed for inverted placement, so that floormat **124** touches the floor and is covered by absorbent sheet **162**. For such an inversion, the fluid impermeable layer of sheet **162** is attached directly to floormat **124**, allowing the absorbent layer of sheet **162** to face up and capture falling fluids.

The device of FIG. **21** can be used in the manner previously described in connection with the device of FIGS. **19** and **20**. For embodiments where the entire underside of absorbent sheet **162** is designed to contact the floor, falling fluids are either absorbed directly on the sheet, or indirectly after draining off floormat **124**. For embodiments where absorbent sheet **162** will overlay floormat **124**, falling fluids are absorbed directly on the sheet over its entire area.

In either case, this device will be deployed, used, and discarded in a manner similar to that previously described.

It is appreciated that various modifications may be implemented with respect to the above described embodiments. In some embodiments the floormat and absorbent sheet may have other than a rectangular outline; for example, an outline that is semicircular, hexagonal, other polygons, oval, curved, etc. In some cases the floormat may be perforated to allow direct drainage to an underlying absorbent sheet. In some embodiments the absorbent sheet will have an impermeable layer that is unbonded and free to move relative to the absorbent layer. In other embodiments, the absorbent sheet will have a pocket for holding the resilient format. In some instances, the floormat will be made of separate segments that are attached to a common absorbent sheet. While the illustrated grooves and channels are shown having a rectangular cross-section, in some embodiments their cross-

section may be rounded, triangular, polygonal, oval, or shaped otherwise. Also in some embodiments the channels may be so close together that a cross-section through the mat reveals a sinuous or sawtooth pattern. Moreover, in some embodiments the path of the channels may be curved. In some cases, the paths of the channels may be in the form of nested arches or may be arranged in a herringbone pattern. In addition, the mats in some embodiments may have perforations that allow the fluids to pass directly through the mat. Furthermore, in embodiments like that of FIG. **1**, not all of the channels will reach the border of the central section, and some channels may run across just the apron. Moreover, instead of a central section surrounded on all sides by an apron, in some embodiments the central section may be a center strip running across the full length of the mat and bordered on either side by a separate pair of tapered aprons.

Obviously, many modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

The invention claimed is:

1. A device for handling fluids comprising:

a floormat having an opposing pair of surfaces including a plurality of edges, a topside and an underside, and being formed, at least in part, of compressible and resilient material, said topside having a spaced plurality of channels feeding at least one gutter on a side of the gutter that has a height at least as great as the opposite side thereof, said channels being sized to avoid a risk of tripping, said topside having a central region and a border region, said central region occupying most of said topside, said central region between the channels having ridges with peaks with most of their lengths lying within an area that is substantially flat, said at least one gutter having at least one outlet for draining fluid from said gutter, said border region lying along said plurality of edges and encircling said central region, said gutter lying alongside a first one of said plurality of edges, portions of said border region spaced from said first one of said plurality of edges having an outwardly tapered perimeter and having a height no greater than that of the at least one gutter.

2. A device according to claim **1** wherein said at least one gutter is formed in said border region.

3. A device according to claim **1** wherein each of the channels have in the central region a sloping floor.

4. A device according to claim **1** wherein said border region on one or more sides of the floormat has an outwardly tapered perimeter, and is at least as wide as, said one or more gutters.

5. A device according to claim **4** wherein said at least one outlet comprises a spaced pair of outlets, drainage off said floormat being provided through one of said pair of outlets, the other one of said outlets being restricted from conducting fluid drainage.

6. A device according to claim **4** wherein said channels have a width of at most 0.5 inch.

7. A device according to claim **4** wherein said channels have a depth of at most 0.25 inch.

8. A device according to claim **1** wherein a predetermined portion of said border region lying along said first one of said plurality of edges is narrower than remaining portions of said border region that are spaced from said predetermined portion.

9. A device according to claim **1** adapted to cooperate with a source of suction, said floormat comprising:

a fitting mounted at said at least one outlet and adapted to attach to said source of suction.

10. A device according to claim **9** comprising:

porous material mounted at said fitting.

11. A device according to claim **10** wherein said porous material is a substance adapted to filter debris and reduce noise.

12. A device according to claim **11** wherein a predetermined portion of said border region lying along said first one of said plurality of edges is narrower than remaining portions of said border region that are spaced from said predetermined portion.

13. A device according to claim **12** wherein said border region on one or more sides of the floormat has an outwardly tapered perimeter, and is at least as wide as, said one or more gutters.

14. A device according to claim **1** wherein the at least one gutter over most of its length being free from obstruction that would prevent fluid from fully filling said gutter and forming a single stream that is exposed on top.

15. A device according to claim **1** comprising:

an absorbent sheet attached to a given one of the opposing surfaces of said floormat, at least part of the absorbent sheet being stacked to extend peripherally beyond the floormat.

16. A device according to claim **15** wherein the absorbent sheet is stacked to extend peripherally beyond the floormat on three sides of the floormat.

17. A device according to claim **15** wherein the absorbent sheet is stacked to extend peripherally beyond the floormat on three sides of the floormat, the floormat and absorbent sheet being coterminous on a fourth side of the floormat.

18. A device according to claim **15** wherein the absorbent sheet has a fluid impermeable face and a fluid absorbing face.

19. A device according to claim **18** wherein the fluid impermeable face of the absorbent sheet is slip resistant, the fluid absorbing face being attached to the given one of the opposing surfaces of the floormat.

20. A device according to claim **19** wherein the absorbent sheet is stacked to extend peripherally beyond the floormat on three sides of the floormat.

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